

Amendments to the Claims:

Claims 1-19 (canceled)

Claim 20 (previously presented): A method to achieve high data rate modulated laser transmissions in an optical network by:

 providing an optical laser which includes a gain medium having a reflective face, and further includes an external cavity effectively terminated by a grating having a bandwidth;

 providing an optical fiber;

 operating the optical laser such that laser radiation is produced in at least two modes within the grating bandwidth;

 through the use of a light-expanding region and an antireflective (AR) layer, coupling light between the gain medium and the external cavity such that substantially all optical resonance that occurs is resonance of the cavity defined between said reflective face and said grating;

 applying a modulation signal to the optical laser, thereby to produce modulated light; and

 launching the modulated light into the optical fiber.

Claims 21-23 (canceled)

Claim 24 (previously presented): A method to reduce noise in an optical communication system by distributing optical power between modes comprising the steps of:

providing an optical transmission path;

providing an external cavity fiber grating laser optically coupled to the transmission path; and

causing the laser to lase simultaneously at two or more modes to partition the optical power over the two or more modes such that as the grating wavelength changes there is a gradual shift in the distribution of the optical power between the two or more modes.

Claim 25 (previously presented): The method of claim 24 wherein providing an external cavity fiber grating laser comprises providing an external cavity fiber Bragg grating laser.

Claim 26 (previously presented): The method of claim 24 wherein providing an optical transmission path comprises providing a single mode or multimode optical transmission path.

Claim 27 (previously presented): A method to emit two or more co-existing modes in an optical communication system to reduce noise caused by mode hopping comprising the steps of:

providing an external cavity grating laser;

causing the laser to lase simultaneously in two or more modes such the net transmitted optical power is distributed amongst the two or more modes; and

modulating the laser to transmit information by the two or more modes to reduce communication system noise caused by mode hopping.

Claim 28 (previously presented): The method of claim 27 wherein providing an external cavity grating laser comprises providing an external cavity fiber Bragg grating laser.

Claim 29 (previously presented): The method of claim 27 wherein providing an optical transmission path comprises providing a single mode or multimode optical transmission path.